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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,615	05/28/2002	Ravi Chandran	2376.2115-004	7963

57690 7590 02/02/2009

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EXAMINER	
WOZNIAK, JAMES S	

ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
02/02/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/019,615	CHANDRAN ET AL.	
	Examiner	Art Unit	
	JAMES S. WOZNIAK	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/24/2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26 and 28-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26 and 28-63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 February 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the office action from 10/24/2008, the applicant has submitted an amendment, filed 11/24/2008, amending independent claims 1, 32, and 62, while arguing to traverse the art rejection based on the limitation regarding the use of a power ratio of near end to far end signal energy to calculate an echo likelihood (*Amendment, Pages 15-16)*. Applicant's arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.

2. The IDS filed on 11/24/2008, which includes the reference requested in the Requirement for Information from 7/7/2008, has been considered by the examiner.

3. In response to amended claims 2-7, 16-18, and 22-25, the examiner has withdrawn the 35 U.S.C. 112, second paragraph rejection directed to indefinite claim language.

4. Upon the reconsideration of claims under recent 35 U.S.C. 101 guidance, claims 32-61 have been determined to be non-statutory. A rejection to this effect has been set forth below.

Response to Arguments

5. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

With respect to amended claim 1, the applicants argue that Rabipour et al *(U.S. Patent: 6,011,846)* fails to teach calculating an echo likelihood using a power ratio of near end to far end signals because Rabipour only generates his ratio only after he obtains a covariance value and after a maximum value thereof exceeds a threshold *(Amendment, Pages 15-16)*.

In response, the examiner notes that Rabipour's ERL does anticipate the applicants' claimed echo likelihood calculation. More specifically, in calculating an ERL Rabipour relies on a function of a ratio of an average signal energy over time of near and far end signals (Col. 5, Lines 45-64). This ratio allows Rabipour's to determine the *likely degree* of an echo in order to allow his system to choose the proper course of action in eliminating/lessening the distorting echo *(ratio calculation contributes to determining the most effective echo suppression treatment for a likely degree of an echo, Col. 5, Line 65- Col. 6, Line 11)*. Thus, since the ratio calculated by Rabipour is used to estimate a degree of echo likelihood in order to determine a most effective echo suppression treatment, the applicants' arguments have been fully considered, but are not convincing. It is also worth noting that other prior art references establish that such a calculation is well-known in the art. For example: see McCaslin et al *(U.S. Patent: 5,668,794) (abstract)*, Jangi *(U.S. Patent: 5,606,550) (Col. 6, Line 36- Col. 7, Line 8)*, and Kawahara et al *(U.S. Patent: 6,272,106) (Col. 11, Lines 7-15)*. These references have been included in the attached PTO-892 for the applicants' consideration.

The art rejections of independent claims 32 and 62 and the further dependent claims are traversed for reasons similar to claim 1*(Amendment, Pages 16-17)*. In regards to such

arguments, see the response directed to claim 1. The applicants' traverse the art rejection of independent claims 26 and 57 and their associated dependent claims for reasons similar to claim 1 *(Amendment, Page 17)*, however these claims do not contain the aforementioned claim limitations. Thus, the applicants' arguments with respect to these claims are moot.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claims 32-61** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim(s) 32 and 57 and their associated dependent claims is/are rejected under 35 USC 101 as not falling within one of the four statutory categories of invention. While the claim(s) recite a series of steps or acts to be performed, a statutory "process" under 35 USC 101 must (1) be tied to another statutory category (such as a manufacture or a machine), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. The instant claim(s) neither transform underlying subject matter *(i.e., no physical transformation takes place in the claims, only the manipulation of audio data)* nor positively recite structure associated with another statutory category *(i.e., the claims do not rely on any type of physical hardware)*, and therefore do not define a statutory process. The further dependent claims fail to overcome this rejection, and thus, are also directed to non-statutory subject matter by virtue of their dependency.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 1-4, 7, 12, 15-16, 18-19, 21-22, 32-35, 38, 43, 47, 50, 52-53, and 62-63** are rejected under 35 U.S.C. 102(e) as being anticipated by Rabipour et al *(U.S. Patent: 6,011,846)*.

With respect to **Claims 1 and 32**, Rabipour discloses:

A reading unit responsive to the near end digital signal to read at least said first parameter of said plurality of parameters and a decoder to perform at least one of said plurality of decoding steps on the near end digital signal and the far end digital signal to generate at least partially decoded near end signals and at least partially decoded far end signals *(means for receiving/reading and extracting speech parameters from near and far end encoded speech signals, Col. 3, Line 48- Col. 4, Line 22)*; and

Responsive to said at least partially decoded near end signals and at least partially decoded far end signals, an adjustment unit to adjust the first parameter to generate an adjusted first parameter *(adjusting near end speech parameters in response to a detected echo, Col. 5, Line 35- Col. 6, Line 16)*.

An echo likelihood estimator to estimate an echo likelihood in said near end signal as a function of a ratio of powers of the near end signal and the far end signal *(echo degree presence certainty determination, Col. 5, Line 35- Col. 6, Line 16)*;

Responsive to said echo likelihood estimate, a replacement unit to replace said first parameter with the adjusted first parameter in the near end digital signal *(means for replacing received speech parameters with echo adjusted near end speech parameters in response to a detected echo, Col. 5, Line 35- Col. 6, Line 16)*; and

A transmitter to transmit said near end digital signal with reduced echo *(performing echo suppression in a telecommunication network that would inherently require some type of transmitter to send echo adjusted speech to a caller, Col. 3, Lines 1-10 and 33-43; and Fig. 1)*.

With respect to **Claims 2 and 33**, Rabipour discloses:

The first parameter is a quantized first parameter and wherein said processor generates said adjusted first parameter in part by quantizing said adjusted first parameter before writing said adjusted first parameter into said near end digital signal *(replacing speech parameters with adjusted speech parameters after quantization, Col. 6, Line 40- Col. 7, Line 32)*.

With respect to **Claims 3 and 34**, Rabipour discloses:

The processor is responsive to the at least partially decoded near end signals and the at least partially decoded far end signals to generate an echo likelihood signal representing the amount of echo present in the partially decoded near end signals, and wherein the processor is responsive to the echo likelihood signal to adjust the first parameter *(Echo compensation adaptive to an echo presence certainty, Col. 5, Line 35- Col. 6, Line 16)*.

With respect to **Claims 4 and 35**, Rabipour recites:

Characteristics comprise spectral shape *(near and far end spectrum, Col. 3, Line 48- Col. 4, Line 22)* and wherein said first parameter comprises a representation of filter coefficients *(LPC coefficients including excitation parameters, Col. 6, Lines 20-31)*, and wherein said processor is responsive to said echo likelihood signal to adjust said representation of filter coefficients towards a magnitude frequency response *(modifying LPC coefficients based on a modified impulse response, Col. 6, Line 20- Col. 7, Line 32)*.

With respect to **Claims 7 and 38**, Rabipour recites:

The magnitude frequency response corresponds to background noise *(correction factor determined using an impulse response for updated LPC parameters corresponding to background noise, Col. 7, Lines 11-62)*.

Claims 12 and 43 contains subject matter similar to Claims 4 and 35, and thus, is rejected for similar reasons.

With respect to **Claim 15**, Rabipour discloses LPC coefficients including excitation parameters *(Col. 6, Lines 20-31)*.

With respect to **Claims 16 and 47**, Rabipour discloses partial decoding for extracting speech parameters, which avoids synthesis processing *(Col. 1, Line 52- Col. 3, Line 10)*.

With respect to **Claim 18**, Rabipour discloses:

The at least one decoding step comprises post filtering *(synthesis processing of a coded speech signal that would inherently include filtering, Col. 1, Line 52- Col. 3, Line 10)*.

With respect to **Claims 19 and 50**, Rabipour discloses the use of LPC-based speech compression *(Col. 1, Lines 48-51)*.

With respect to **Claims 21 and 52**, Rabipour discloses the use of CELP compression *(Col. 8, Lines 8-11)*.

With respect to **Claims 22 and 53**, Rabipour discloses averaging a set of near and far end LPC parameters to determine a degree of echo compensation *(Col. 3, Line 48- Col. 4, Line 22)*.

With respect to **Claim 62**, Rabipour discloses:

A near end partial decoder to at least partially decode coded near end digital signals, including at least a first parameter of a plurality of parameters representing respective near end audio signals in the coded near end digital signals to form at least partially decoded near end signals *(decoder that extracts speech parameters from a near-end signal, Col. 3, Lines 48-54)*;

A far end partial decoder to at least partially decode coded far end digital signals, including at least a first parameter of a plurality of parameters representing respective far end audio signals in the coded far end digital signals to form at least partially decoded far end signals *(decoder that extracts speech parameters from a far-end signal, Col. 3, Lines 48-54)*;

A processor responsive to said near end digital signals to read at least said first parameter of first said plurality of parameters in the coded near end digital signals and at least partially decode said near end digital signal and to read a coded far end digital signal to generate at least partially decoded far end signals and at least partially decoded far end signals *(Col. 3, Line 48- Col. 4, Line 22)*, and responsive to at least said partially decoded near end signals and at least partially decoded far end signals to adjust said first parameter to generate an adjusted first parameter and to replace at least said first parameter with said adjusted first parameter in said near end digital signal to reduce echo in the near end digital signal *(processor for adjusting near end speech parameters in response to a detected echo, Col. 5, Line 35- Col. 6, Line 16)*.

With respect to **Claim 63**, Rabipour discloses:

A reading unit to read at least a first parameter of the plurality of parameters*(means for receiving/reading speech parameters from near and far end encoded speech signals, Col. 3, Line 48- Col. 4, Line 22)*;

A decoding unit to generate at least partially decoded far-end and near-end signals*(means for decoding/extracting speech parameters from near and far end encoded speech signals, Col. 3, Line 48- Col. 4, Line 22; and abstract)*;

An adjustment unit to adjust the first parameter as a function of the decoded near-end and far-end signals to generate an adjusted first parameter*(adjusting near end speech parameters in response to a detected echo, Col. 5, Line 35- Col. 6, Line 16)*;

An echo likelihood estimating unit to estimate an echo likelihood in the near-end signal as a function of a ratio of powers of the near-end and far-end signals *(echo degree presence certainty determination means, Col. 5, Line 35- Col. 6, Line 16)*;

A replacement unit to replace the first parameter with the adjusted first parameter to reduce the echo in the near-end signal *(means for replacing received speech parameters with echo adjusted near end speech parameters in response to a detected echo, Col. 5, Line 35- Col. 6, Line 16)*; and

A transmitting unit to transmit the near-end signal with reduced echo *(performing echo suppression in a telecommunication network that would inherently require some type of transmitter to send echo adjusted speech to a caller, Col. 3, Lines 1-10 and 33-43; and Fig. 1)*.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 5-6, 13-14, and 36-37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabipour et al in view of Strawczynski et al *(U.S. Patent: 6,138,022)*.

With respect to **Claims 5, 14, and 36**, Rabipour discloses the echo suppression system and method utilizing LPC coefficients, as applied to Claims 1 and 12. Rabipour does not teach the use of line spectral frequencies *(LSFs)*, however Strawczynski teaches the use of such LSF coefficients *(Col. 3, Lines 24-34)*.

Rabipour and Strawczynski are analogous art because they are from a similar field of endeavor in speech echo compensation. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Rabipour with the LSF coefficients taught by Strawczynski in order to provide speech coefficients that uniquely define a human articulatory tract, which are suited to a number of different applications *(Strawczynski, Col. 3, Lines 24-34)*.

With respect to **Claims 6, 13, and 37**, Strawczynski additionally recites the use of log area ratio coefficients *(Col. 3, Lines 24-34)*.

12. **Claims 8-9 and 39-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabipour et al in view of Gritton et al *(U.S. Patent: 5,857,167)*.

With respect to **Claims 8 and 39**, Rabipour discloses the echo suppression system and method utilizing LPC coefficients, as applied to Claims 1 and 12. Rabipour also discloses LPC coefficients related to an energy level *(Col. 5, Line 45- Col. 6, Line 16)*. Rabipour does not specifically suggest the use of a codebook gain, however Gritton teaches the use of such a gain parameter *(Col. 6, Lines 55-65)*.

Rabipour and Gritton are analogous art because they are from a similar field of endeavor in speech echo compensation. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Rabipour with the gain codebook parameters taught by Gritton in order to provide a means for compensating for an error between original and synthesized speech *(Col. 4, Lines 31-67)*.

With respect to **Claims 9 and 40**, Gritton teaches the codebook gain as applied to Claim 8.

13. **Claims 10-11, 20, 23-25, 41, 42, 46, 49, 51, and 54-56** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabipour et al in view of Chen (U.S. Patent: 5,651,091).

With respect to **Claims 10 and 41**, Rabipour discloses the echo suppression system and method utilizing LPC coefficients, as applied to Claims 1 and 12. Rabipour does not specifically suggest the use of long-term predictor and pitch period parameters, however Chen discloses the use of such parameters *(Col. 4, Lines 3-44)*.

Rabipour and Chen are analogous art because they are from a similar field of endeavor in speech coding. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Rabipour with the long-term predictor and pitch period parameters taught by Chen in order to provide parameters that exploit the pitch periodicity in voiced speech *(Chen, Col. 4, Lines 29-31)* and impose lesser demands upon echo suppressors *(Chen, Col. 1, Lines 38-48)*.

With respect to **Claims 11 and 42**, Chen further recites the use of a long-term pitch predictor and an associated pitch gain *(Col. 3, Lines 14-25)*.

With respect to **Claims 20 and 51**, Chen discloses the long-term predictor coding as applied to Claim 11.

With respect to **Claims 23 and 54**, Rabipour teaches the frame-based echo suppression system and method that adjusts speech parameters according to a detected echo, as applied to Claim 1, while Chen recites subframe-based processing *(Col. 5, Lines 5-8)*.

With respect to **Claims 24 and 55**, Rabipour teaches completing echo suppression for a frame before advancing to a next frame as shown in Figs. 2C and 3, while Chen discloses the subframe based processing as applied to Claim 23.

With respect to **Claims 25 and 56**, Rabipour teaches the frame-based echo suppression system and method that adjusts speech parameters for each speech frame according to a detected echo, as applied to Claim 1, while Chen recites subframe-based processing *(Col. 5, Lines 5-8)*.

With respect to **Claim 46**, Rabipour further discloses LPC coefficients including excitation parameters *(Col. 6, Lines 20-31)*.

With respect to **Claim 49**, Rabipour further discloses:

The at least one decoding step comprises post filtering *(synthesis processing of a coded speech signal that would inherently include filtering, Col. 1, Line 52- Col. 3, Line 10)*.

14. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rabipour et al in view of Christensson et al *(U.S. Patent: 6,510,224)*.

With respect to **Claim 17**, Rabipour discloses the echo suppression system and method utilizing spectrum coefficients, as applied to Claims 1 and 12. Rabipour does not specifically suggest the use of power parameters, however Christensson teaches the use of such parameters *(Col. 6, Line 40- Col. 7, Line 8)*.

Rabipour and Christensson are analogous art because they are from a similar field of endeavor in speech echo compensation. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Rabipour with the use of power parameters in echo suppression as taught by Christensson in order to achieve improved echo suppression performance based on a power parameter and focused on frequency bands where an echo component could easily be mistaken for near end speech *(Christensson, Col. 7, Lines 1-8)*.

15. **Claims 26, 28-31, and 57-61** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabipour et al in view of the Applicants' Admitted Prior Art *(AAPA)*.

With respect to **Claims 26 and 57**, Rabipour discloses:

A processor responsive to the near end digital signal and the far end digital signal to adjust the first and second bits *(LPC compressed speech data bit stream adjusted based on near*

and far end speech data, Col. 3, Lines 1-10; Col. 3, Line 48- Col. 4, Line 22; Col. 5, Line 35- Col. 7, Line 32); and

A transmitter to transmit the first and second bits in an adjusted state to a far end device to present the first and second bits in an audible form to a user *(performing echo suppression in a telecommunication network that would inherently require some type of transmitter to send echo adjusted speech to a caller, Col. 3, Lines 1-10 and 33-43; and Fig. 1)*.

Although Rabipour discloses adjusting bits directed to LPC compression code, Rabipour does not specifically suggest the combination of a compression code and a linear code to express a speech signal, such a coding scheme, however, is well known in the prior art as is evidenced by the AAPA. The AAPA recites a TFO GSM standard using a combination of coded speech and PCM bits *(Page 2, Line 11- Page 3, Line 11; and Fig. 3)*.

Rabipour and the AAPA are analogous art because they are from a similar field of endeavor in speech compression. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Rabipour with the TFO GSM standard recited in the AAPA in order to expand Rabipour's echo cancellation for use in well-known cellular networks *(AAPA, Page 2, Lines 17-19)*.

With respect to **Claims 28 and 58**, the AAPA further recites the use of PCM code *(Page 2, Line 7- Page 3, Line 11)*.

With respect to **Claims 29 and 59**, the AAPA recites the TFO GSM standard as applied to Claims 26 and 57.

With respect to **Claims 30 and 60**, the AAPA further recites first bits comprising the two LSBs and second bits comprising 6 MSBs *(Page 3, Lines 3-11; and Fig. 3)*.

With respect to **Claims 31 and 61**, the AAPA further recites the use of PCM code for the 6 MSBs *(Page 2, Line 7- Page 3, Line 11; and Fig. 3)*.

16. **Claims 44-45** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabipour et al in view of Chen, and further in view of Strawczynski et al.

With respect to **Claim 44**, Rabipour in view of Chen discloses the echo suppression system and method utilizing speech coefficients comprising a long-term pitch predictor and an associated pitch gain, as applied to Claim 42. Rabipour in view of Chen does not teach the use of log area ratios *(LARs)*, however Strawczynski teaches the use of such LAR coefficients *(Col. 3, Lines 24-34)*.

Rabipour, Chen, and Strawczynski are analogous art because they are from a similar field of endeavor in speech coding. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Rabipour in view of Chen with the LAR coefficients taught by Strawczynski in order to provide speech coefficients that uniquely define a human articulatory tract, which are suited to a number of different applications *(Strawczynski, Col. 3, Lines 24-34)*.

With respect to **Claim 45**, Strawczynski teaches the use of such LSF coefficients *(Col. 3, Lines 24-34)*.

17. **Claim 48** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rabipour et al in view of Chen, and further in view of Christensson et al.

With respect to **Claim 48**, Rabipour in view of Chen discloses the echo suppression system and method utilizing LPC coefficients, as applied to Claim 46. Rabipour in view of Chen does not specifically suggest the use of power parameters, however Christensson teaches the use of such parameters *(Col. 6, Line 40- Col. 7, Line 8)*.

Rabipour, Chen, and Christensson are analogous art because they are from a similar field of endeavor in speech coding. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Rabipour in view of Chen with the use of power parameters in echo suppression as taught by Christensson in order to achieve improved echo suppression performance based on a power parameter and focused on frequency bands where an echo component could easily be mistaken for near end speech *(Christensson, Col. 7, Lines 1-8)*.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See PTO-892.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/James S. Wozniak/
Primary Examiner, Art Unit 2626